

Amendment under 37 CFR §1.111
Application No. 10/509,425
Attorney Docket No. 042592

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

1. (Currently amended): A luminescent material for scintillators, comprising a single crystal of an Yb-containing mixed-crystal oxide which has a composition represented by either one of $R_3Al_5O_{12}$, $R_3Ga_5O_{12}$ and $Li_6R(BO_3)_3$, wherein R is a mixture of Yb and either one of [[Y,]] Gd and Lu, and said Yb as an element capable of forming an optically active state called CTS together with a neighboring negative ion adjacent thereto, wherein the molar ratio of either one of [[Y,]] Gd and Lu to Yb in said R satisfies the conditions expressed by the following formulas:

$$1.04x + 1.02y \leq 1.03;$$

$$x + y = 1;$$

$$0 < x < 1; \text{ and}$$

$$0 < y < 1,$$

wherein x is a molar ratio of Yb, and y is a molar ratio of either one of [[Y,]] Gd and Lu.

2. (Currently amended): A luminescent material for scintillators, comprising a single crystal of an Yb-containing mixed-crystal oxide which has a composition represented by either one of $LaR_2Ga_3O_{12}$ $La_3R_2Ga_3O_{12}$ and $Gd_3R_2Ga_3O_{12}$, wherein R is a mixture of Yb and either one of Y, Gd and Lu, and said Yb as an element capable of forming an optically active state called

Amendment under 37 CFR §1.111
Application No. 10/509,425
Attorney Docket No. 042592

CTS together with a neighboring negative ion adjacent thereto, wherein the molar ratio of either one of Y, Gd and Lu to Yb in said R satisfies the conditions expressed by the following formulas:

$$1.04x + 1.02y \leq 1.03;$$

$$x + y = 1;$$

$$0 < x < 1; \text{ and}$$

$$0 < y < 1,$$

wherein x is a molar ratio of Yb, and y is a molar ratio of either one of Y, Gd and Lu.

3. (Canceled).

4. (New): A luminescent material for scintillators, comprising a single crystal of an Yb-containing mixed-crystal oxide which has a composition represented by either one of $R_3Ga_5O_{12}$ and $Li_6R(BO_3)_3$, wherein R is a mixture of Yb and Y, and said Yb as an element capable of forming an optically active state called CTS together with a neighboring negative ion adjacent thereto, wherein the molar ratio of Y to Yb in said R satisfies the conditions expressed by the following formulas:

$$1.04x + 1.02y \leq 1.03;$$

$$x + y = 1;$$

$$0 < x < 1; \text{ and}$$

$$0 < y < 1,$$

wherein x is a molar ratio of Yb, and y is a molar ratio of Y.